Trends in Pregnancy-Associated Homicide, United States, 2020

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Objectives. To estimate the national pregnancy-associated homicide rate in 2020 and to characterize patterns of victimization.

Methods. Using a retrospective analysis of the 2020 US national mortality file, I identified all homicides of women who were pregnant or within 1 year of the end of pregnancy. Descriptive statistics characterized these victims, and I calculated annual pregnancy-associated homicide rates (deaths per 100 000 live births) for comparisons with 2018 and 2019. I estimated the added risk conferred by pregnancy in 2020 by comparing the pregnancy-associated homicide rate to homicide in the nonpregnant, nonpostpartum population of females aged 10 to 44 years.

Results. There were 5.23 pregnancy-associated homicides per 100 000 live births in 2020, a notable increase from previous years. Rates were highest among adolescents and non-Hispanic Black women. Eighty percent of incidents involved firearms. The risk of homicide was 35% greater for pregnant and postpartum women than for their nonpregnant, nonpostpartum counterparts, who did not experience as large an increase from previous years.

Conclusions. Pregnancy-associated homicide substantially increased in 2020.

Public Health Implications. Policies to address domestic and community violence against women are urgently needed. (*Am J Public Health*. 2022;112(9):1333–1336. https://doi.org/10.2105/AJPH.2022.306937)

AJPH September 2022, Vol 112, No. 9

Homicide remains a leading cause of death during pregnancy and the postpartum period in the United States.[1] Beginning in 2018, state-by-state implementation of the revised certificate of death is complete, enabling national estimates of pregnancy-associated homicide mortality (homicide during and up to 1 year postpartum). In 2018 and 2019, there were 3.62 pregnancy-associated homicides per 100 000 live births, a rate that was 16% higher than the rate among nonpregnant and nonpostpartum women of reproductive age.[1]

When data on perpetrators are available, research finds that most cases of pregnancy-associated homicide involve domestic violence.[2] Domestic violence in the context of the COVID-19 pandemic amounted to a "pandemic within a pandemic,"[3] with preliminary studies showing some jurisdictions experiencing more than 10% increases in reports of victimization[4] and 1 in 10 women reporting new or increased severity of abuse since the pandemic's onset.[5] Virus containment strategies (stay-at-home orders) meant many victims were isolated with their abusers and unable to safely access services while pandemic-induced economic hardships exacerbated circumstances that contribute to violence.[3] Such adversities likely affected people in the peripartum period, a population especially vulnerable to violence, as well. The purpose of this analysis was to estimate the national pregnancy-associated homicide rate in 2020 and to characterize patterns of victimization.

METHODS

This was a retrospective analysis of the 2020 mortality file released by the National Center for Health Statistics (NCHS), which includes all death records issued in the United States. These data were restricted to female-sex-assigned-at-birth decedents of reproductive age (10–44 years), and cases of pregnancy-associated homicide were those with a manner of death indicating homicide or an *International Classification of Diseases, 10th Revision* (*ICD-10*; Geneva,

Switzerland: World Health Organization; 1992) code for assault as underlying cause of death (X85–Y09), in addition to a pregnancy checkbox value indicating that the decedent was pregnant or within 1 year of the end of pregnancy at the time of her death. I obtained data on counts of live births by year (including by maternal age and race/ethnicity) from the NCHS natality files and used them to estimate annual pregnancy-associated homicide rates (deaths per 100 000 live births).

Cases of homicide among nonpregnant, nonpostpartum women of reproductive age were records with a pregnancy checkbox indicating that the decedent was not pregnant or within 1 year of the end of pregnancy. I computed homicide rates (deaths per 100 000 population) of the nonpregnant, nonpostpartum population of reproductive age by taking the count of females aged 10 to 44 years (data obtained from the US Census' American Community Survey) minus counts of live births in each year. I estimated all homicide rates for the total population and with stratification by age and race/ethnicity when sufficient case counts allowed.

In addition to race/ethnicity, age, and timing of death relative to pregnancy (during pregnancy or up to 1 year after), data available on relevant characteristics of each incident included whether it involved firearms (defined by *ICD-10* codes for underlying cause of death X93–X95) and place of injury. Descriptive statistics characterized pregnancy-associated homicide victims and incidents. A log Poisson regression model estimated the rate ratio and 95% confidence intervals comparing homicide rates between the pregnant–postpartum and nonpregnant–nonpostpartum populations. I conducted all analyses in SAS version 9.4 (SAS Institute, Cary, NC).

RESULTS

There were 189 pregnancy-associated homicides identifiable in the 2020 mortality file. The 2020 pregnancy-associated homicide rate was 5.23 deaths per 100 000 live births, up from 3.30 in 2018 (n = 125) and 3.95 in 2019 (n = 148), the 2 previous years of available data. The majority of victims (55.0%) were non-Hispanic Black and 30.1% were non-Hispanic White. Forty-five percent were aged 24 years or younger. Among all incidents, 81% involved firearms, 55% occurred in the home, and 54% of victims were pregnant at the time of their death whereas the remaining victims were up to 1 year postpartum. Patterning of pregnancy-associated homicide by age and race/ethnicity mirrored previous years, with adolescent and non-Hispanic Black women experiencing the highest rates (Figure 1).

In 2020, there were 3.87 homicides of nonpregnant, nonpostpartum women of reproductive age per 100 000 population. Risk of homicide victimization was 35% higher among pregnant and postpartum women compared with nonpregnant, nonpostpartum women of reproductive age (homicide rate ratio = 1.35; 95% confidence interval = 1.17, 1.57).

DISCUSSION

This national analysis of pregnancy-associated homicide revealed a substantially increased incidence in 2020 compared with previous years, with a rate 32.4% higher than in 2019. This finding parallels the 2020 trend in maternal mortality, published by the Centers for Disease Control and Prevention, which was 18.4% higher than in 2019.[6] Common social, structural, and policy factors may underlie both of these alarming trends, but specific reasons remain speculative.

Increases in firearm violence and homicide were observed in the general population during 2020,[7,8] which may be due at least in part to pandemic-related economic disruptions, including unemployment.[9] Like women in the peripartum period, nonpregnant, nonpostpartum women of reproductive age also experienced an increase in homicide during 2020, but to a lesser degree (3.87 deaths per 100 000 population in 2020 compared with 3.12 in 2018–2019).[1] The added risk of homicide conferred by pregnancy was pronounced and exacerbated during 2020 (35% compared with 16% in previously reported years[1]).

There are a number of potential explanations for these disturbing trends. The increase in severity of domestic violence observed during the first year of the COVID-19 pandemic likely contributed to the observed increase in pregnancy-associated homicide.[5] Other simultaneously occurring factors, such as a surge in firearm ownership,[8] may have played a role. The percentage of pregnancy-associated homicides involving firearms in 2020 was higher than in any previously reported year or jurisdiction.[1,10,11] Finally, to the extent that the ability to control pregnancy status may have implications for one's risk of homicide, passage and implementation of an unprecedented number of abortion restriction policies in recent years (both prior to and related to the 2020 COVID-19 pandemic) may also be contributing factors.[12]

The data analyzed in this study contain no information on the perpetrator, preventing the ability to isolate incidents that were the result of intimate partner violence. Other limitations include the inability to explore further stratification

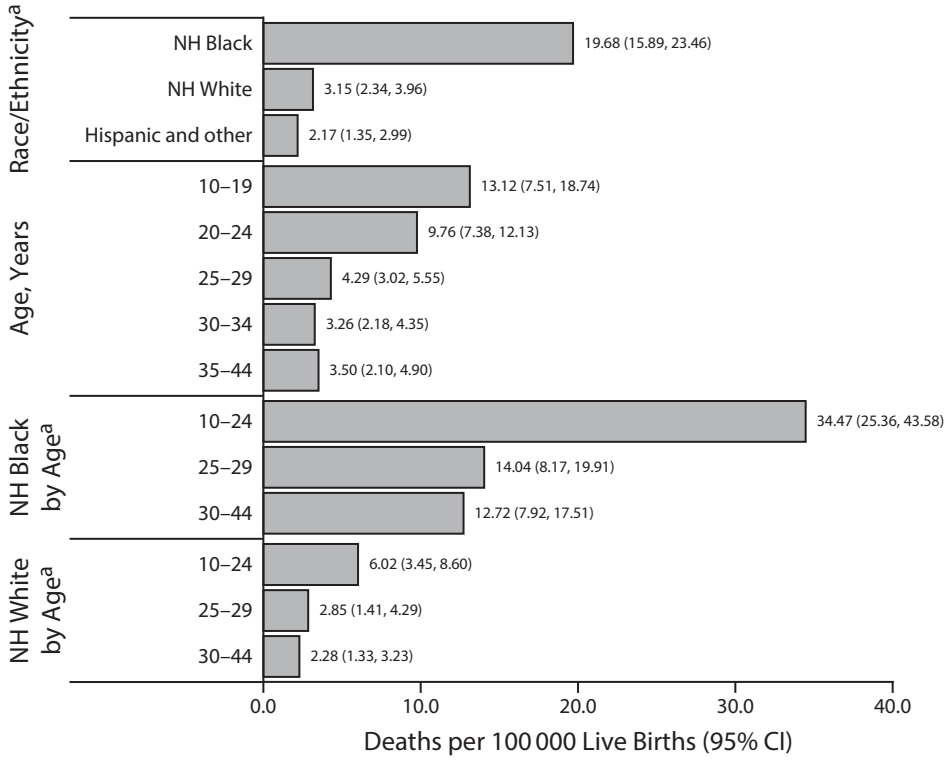

FIGURE 1— Pregnancy-Associated Homicide Rates Among Persons Aged 10–44 Years by Race/Ethnicity and Age: United States, 2020

Note. CI = confidence interval; NH = non-Hispanic.
[a]Data suppression rules prohibit further stratification by racial/ethnic identity and age.

by other race/ethnicities and social identities while maintaining both rate stability and data confidentiality. Finally, all pregnancy-associated homicide rates reported and compared in this analysis are likely underestimates of their true magnitude, given the known difficulties in case ascertainment based on data from death records alone.

PUBLIC HEALTH IMPLICATIONS

The public health implications of these findings are immense. Pregnancy-associated homicide lies at the intersection of multiple ongoing and overlapping public health crises—the COVID-19 pandemic, surging violence, expanding economic inequalities, reproductive oppression, and worsening trends in maternal health and inequities. Policy and programmatic intervention should focus on violence prevention at the highest level by ensuring equal access to health-promoting resources and opportunities for women and their families during times of crisis and beyond. AJPH

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PUBLICATION INFORMATION

Full Citation: Wallace ME. Trends in pregnancy-associated homicide, United States, 2020. *Am J Public Health*. 2022;112(9):1333–1336.

Acceptance Date: May 4, 2022.

DOI: https://doi.org/10.2105/AJPH.2022.306937

ACKNOWLEDGMENTS

M. E. Wallace is supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development (grant no. R01HD092653).

Note. The funding source had no involvement in the conduct of the research or preparation of the article. Its contents are solely the responsibility of the author and do not necessarily represent the official position of the National Institutes of Health.

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

This is an analysis of de-identified, secondary data. As such, this study was ruled exempt by the Tulane University institutional review board.

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